

REMARKS

Reconsideration of the application in view of the above amendments and following remarks is respectfully requested. Applicant has added a new claim 14, has amended independent claims 1 and 6 to further clarify their scope. Thus, claims 1-14 are pending in the application.

Information Disclosure Statement

Applicant filed an Information Disclosure Statement with a Form PTO/SB/08A on September 19, 2002, which is before the mailing of the first Office Action. Applicant, however, did not receive a copy of the Form PTO/SB/08A initialed by the Examiner. For the Examiner's convenience, Applicant is providing herewith a copy of the Information Disclosure Statement as filed September 19, 2002. Applicant respectfully requests that the Examiner return an initialed copy of the form PTO/SB/08A for Applicant's records.

Claim Rejections under 35 U.S.C. §102(b)

In the above Office Action dated April 22, 2003, the Examiner rejected pending claims 1 and 6 under 35 U.S.C. §102(b) as being unpatentable over Sandin et al. (US 5,946,357).

The Examiner contends that Sandin et al.'s N-Frame Buffer 108 corresponds to Applicant's memory buffer, and presumably contends that Sandin et al.'s apparatus 80, which includes their control device 114, decoders 66 and 76 and two separate deinterleavers 62 and 72 corresponds to Applicant's recited means for performing a first and second de-interleaving of the data (See Office Action mailed April 22, 2003 page 2).

Applicant respectfully disagrees and submits that Applicant's claimed "means for performing a first and second de-interleaving" is very different from Sandin et al.'s apparatus 80. In one embodiment, as shown in Applicant's FIG. 4 for example, Applicant teaches a unified de-interleaver 400, which combines a first and second de-interleaving operations (Applicant's Specification, page 9, lines 13-14). As compared to Sandin et al.'s apparatus, which uses two separate de-interleavers, Applicant's unified de-interleaver 400, saves chip real estate and potentially power usage.

Although Applicant's invention is completely different from the teachings of Sandin et al., Applicant has amended independent claims 1 and 6 to help clarify their scope. Specifically, Applicant has amended independent claims 1 and 6 to clarify that the means for performing a first and second de-interleaving "includes means for reading and writing the data to the memory buffer in connection with said first and second de-interleaving." In one embodiment, as shown in FIG. 4 and as described by Applicant beginning at page 9 of the specification, a read/write unit 402 in the above-described unified de-interleaver 400, both reads and writes data to memory 406 "in connection with said first and second de-interleaving."

In contrast, Sandin et al. do not teach nor suggest any structures that both read and write data to their N-Frame Buffer 108 in connection with a first and second de-interleaving. Instead the Sanden et al., as shown in FIGS. 1 and 4, perform de-interleaving with their inner deinterleaver 62 and their outer deinterleaver 72 *after data has already passed through* their N-Frame buffer 108. This differs from the approach of the invention as presently claimed, which contemplates performing de-interleaving in connection with the process of reading data from and writing data to a buffered memory.

Thus, Applicant submits independent claims 1 and 6 are novel and non-obvious, and respectfully requests that the Examiner reconsider the outstanding rejection with a view towards allowance of claims 1 and 6.

Claim Rejections under 35 U.S.C. §103(a)

The Examiner has rejected pending claims 9, 13, 2-5, 7-8, 10-12 under 35 U.S.C. §103(a) as being unpatentable over Sandin et al. (US 5,946,357) in view of Prasad (US 6,185,200). Applicant respectfully traverses these rejections.

First, Applicant respectfully submits that Sandin et al. combined with Prasad do not establish a prima facie case of obviousness of Applicant's independent claims 9, 11 and 13 because the combined references simply do not disclose each and every element of independent claims 9, 11 and 13.

The Examiner indicates, and Applicant agrees, that Sandin et al. does not disclose a read/write unit configured to perform a first and second de-interleaving of data (See Office

Action mailed April 22, 2003, page 5). The Examiner, however, presumably contends that Prasad teaches a read/write unit configured to perform a first and second de-interleaving of data. Applicant respectfully disagrees.

Specifically, Applicant submits that Prasad describes a single de-interleaving process and *not* a first and second de-interleaving of data. There is simply no disclosure of a second de-interleaving of data in Prasad. In fact, neither the word “first” nor the word “second” is used to modify the de-interleaving process in Prasad.

Thus, Applicant submits that neither Sandin et al. nor Prasad teach or suggest a read/write unit “configured to perform a first and second interleaving of the data” as recited in independent claim 9, nor do these references teach “performing a second de-interleaving as the data is written to a memory buffer; and performing a first de-interleaving as data is read from said memory buffer” as recited in independent claim 11. Similarly, there is no teaching nor suggestion in either Sandin et al. or Prasad of “writing said data to a memory buffer according to a second de-interleaving pattern; and reading said data from said memory buffer according to a first de-interleaving pattern” as recited in independent claim 13. As such, Applicant submits that the rejections should be withdrawn.

Applicant submits that another reason that Prasad and Sandin et al. do not establish a prima facie case of obviousness of Applicant’s independent claims 9, 11 and 13 is because there is no basis in the art for combining or modifying the cited references to arrive at Applicant’s claimed invention. As discussed, Sanden et al. is completely different from Applicant’s invention because Sanden et al. actually teach an inner deinterleaver 62 and a separate outer deinterleaver 72. Prasad on the other hand, appears to be primarily concerned with teaching a method for de-interleaving with closed-form expressions so de-interleaving may be performed with reasonable cost in either hardware or software as opposed to only in software (See Prasad, Col. 2, lines 31-46).

Therefore, Applicant submits that Prasad and Sandin et al. cannot be used to establish a prima facie case of obviousness of Applicants’ independent claims, and respectfully request that the examiner reconsider the outstanding rejection of claims 9, 11 and 13 with a view towards allowance.

In view of the remarks above, Applicants further submit that dependent claims 2-5, 7-8, 10, 12 and 14 are allowable by virtue of their dependence on one the allowable independent claims 1, 6, 9, 11 and 13.

CONCLUSION

Applicant respectfully requests entry of these amendments prior to the examination of the above-identified application. Applicant respectfully submits that the invention as presently claimed is patentably distinct from the cited references, either alone or in combination. The undersigned would of course be available to discuss the present application with the Examiner if in the opinion of the Examiner such a discussion could advance prosecution of the present application.

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Respectfully submitted,

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